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AMENDMENTS TO THE CLAIMS

Please amend claims 1, 2, 5, 9, 11, 12, 18, 22, cancel claim 3 and add new claim 23 as noted below.

1.   (Currently amended) A system that programs a memory cell comprising:
a memory cell to be programmed comprising;
        a first electrode that forms a base for the memory cell;
        a functional layer formed over the first electrode to facilitate charge migration in the memory cell, an impedance state of the functional layer changes based on a migration of electrons or holes when subject to an external electric field or light radiation, the impedance state indicative of information content;
        a second electrode formed over the functional layer and operative with the first electrode to activate a selective memory portion in the memory cell, and
a control component that applies an external stimulus to the memory cell, to affect a property associated with the memory cell, the control component comprising a comparator that compares a value of the property with a threshold value, to determine a program state of the memory cell.

2.   (Currently amended) The system of claim 1, the control component ~~further~~ comprising a generator. ~~and a ballast resistor.~~

3.   (Cancelled.)

4.   (Original) The system of claim 1, wherein the external stimulus is a voltage.

5.   (Currently amended) The system of claim ~~3~~ 1, wherein the ~~electrical state is an~~ impedance of the memory cell ~~that~~ represents more than one bit of information.

6.   (Original) The system of claim 1, the functional layer is a selectively conductive media further comprising an organic light emitting material.

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7.   (Original) The system of claim 1, the functional layer comprises a passive layer, an active layer and a barrier layer.

8.   (Original) The system of claim 1, the second electrode comprising a plurality of electrodes to facilitate decoupling of write and read circuits that program the memory cell.

9.   (Currently amended) A method of programming a memory cell comprising:

providing a memory cell comprising a selectively conductive layer that is sandwiched between electrodes;

applying an external stimulus to the memory cell to affect <u>an impedance state of a</u> ~~property associated with~~ the memory cell; and

comparing the ~~property~~ <u>impedance state</u> with a predetermined threshold value.

10.   (Original) The method of claim 9, wherein applying an external stimulus comprises applying a voltage to the memory cell.

11.   (Currently amended) The method of claim 9, <u>further comprising</u> ~~wherein comparing the property with a predetermined threshold value comprises~~ comparing an electric current passing through the memory cell with a predetermined threshold value.

12.   (Currently amended) The method of claim 9, further comprising removing the external stimulus based on an outcome of <u>the</u> comparing <u>act.</u> ~~a property with a predetermined threshold value.~~

13.   (Original) A method of programming information in a memory cell comprising:

applying an electric field pulse that exceeds a threshold value to the memory cell, the memory cell comprising a selectively conductive layer that is sandwiched between electrodes; and

controlling at least one of an impedance of the cell, current flowing through the cell, and a time duration that current flows through the cell, to program the memory cell.

14.   (Original) The method of claim 13 further comprising comparing a current flowing through the cell with a predetermined value.

15.   (Original) The method of claim 14 further comprising removing the electric field pulse based on an outcome of comparing a current flowing through the cell with a predetermined value.

16.   (Original) The method of claim 15 further comprising applying a further electric pulse to read information from the memory cell.

17.   (Original) The method of claim 13 further comprising applying a reverse electric field pulse to erase programmed information..

18.   (Currently amended) A memory cell comprising:
        a first electrode that forms a base for the memory cell;
        a functional layer formed over the first electrode to facilitate charge migration in the memory cell, an impedance state of the functional layer changes based on a migration of electrons or holes when subject to an external electric field or light radiation, the impedance state indicative of information content;
        a second electrode formed over the functional layer and operative with the first electrode to activate a selective memory portion in the memory cell, and
        a diode component coupled to the first or second electrode.

19.   (Original) The memory cell of claim 18, wherein the diode component is positioned between the first and the second electrode.

20.   (Original) The memory cell of claim 18, wherein the diode component comprises a photo sensor element.

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21.   (Original) The memory cell of claim 18, wherein the diode component forms a layer comprising at least one of electro conductive material, semiconductor material, and organic material.

22.   (Currently amended) A system for programming a memory cell comprising:
means for regulating an impedance state of ~~a property associated with~~ a memory cell; and means for setting a program state based on the ~~regulated property~~ impedance state of the memory cell.

23.   (New) The system of claim 22 further comprising means for erasing the memory cell.

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